Thanasak Jenmana
Office 466, Faculty of Economics, Thammasat University
Office hours: Mondays 9-11 am by appointment
email: jenmana@econ.tu.ac.th

PROBLEM SET II

EE212 — Principles of Macroeconomics
Semester 2/2019-2020
Total mark: 20 points
Due date: Saturday 29 February 2020 **before midnight** to jenmana@econ.tu.ac.th.
Any late submission **will not** be graded.
Please submit in pdf form, and not word document.

Dear students,
Two weeks are given to complete this assignment. As mentioned, we will have four problem sets, each making up 5% of your total grade (20% in total). These will be challenging, and will demand you to revisit the topics that have been mentioned so far in class, as well as to read the mandatory readings.

Reminder on academic policy: I encourage you all to work together and exchange ideas out of class. However, I also encourage you all as university scholars to start independently critically approach a topic, a question, or a challenge that will be posed in this class, as well as the future ones.
I expect your independent completion of the short essays, as it would be obvious if they are not your own ideas. Plagiarism and cheating will be treated with disciplinary actions. Thammasat University, our faculty, and I take academic integrity extremely seriously.

Problem I: Short answers (5 points)

ไม่มี G ไม่มี T . Keynesian Ep 1 $\frac{1}{1-MPC} > 0$ $\Delta Y = \Delta C_0 + MPC\Delta Y - MPC\Delta T + \Delta G + \Delta I$

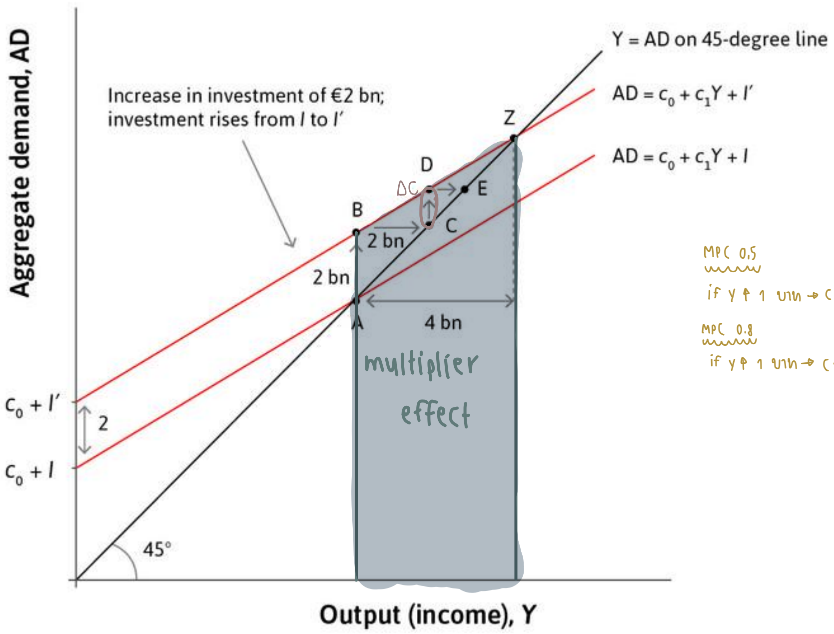
if MPC = 0, there is no multiplier
MPC > 0, then the multiplier will always greater than 1 since Multiplier : $\frac{1}{1-MPC}$

1. "The Keynesian multiplier is always great than 1 if $T = 0$ and $G = 0$." True or false? Why? True $0 < MPC < 1$

$0 < MPC < 1$; $0 < MPS < 1$: Y↑ (income) S↑ = saving exceed → (−) negative saving / (0) zero saving (≠ no saving) / (+) positive saving

2. "There is no private savings at the Keynesian equilibrium." True or false? Why? False because at Keysian Equilibrium, saving will be positive since Y = C+I

3. Let's say there is no government spending and taxes, and no imports and exports. The consumption function is given by $C = c_0 + c_1 Y$, and I (investment) is given. The economy is graphically visualised as below:



MPC 0.5
if Y ↑ 1 บาท → C ↑ 0.5 บาท
MPC 0.8
if Y ↑ 1 บาท → C ↑ 0.8 บาท

MPC = 0.5 when I ↑ 2

There is a $2 billion increase in investment. The marginal propensity to consume is 0.5. Which of the following statement is correct? (multiple correct answers may be possible)

(A) The new goods market equilibrium after the investment increase is E. False, the new equilibrium is Z

$\frac{\Delta Y}{\Delta I} = \frac{1}{1-MPC} = 2$; 2 = ; $\Delta Y = (2)(2) = 4$

(B) Aggregate demand (ΔY) increases by a total of \$2 billion × 0.5 = \$1 billion due to the increase in investment. False

(C) The multiplier ($\frac{1}{1-MPC}$) is 2. $\frac{1}{1-0.5} = 2$ #CORRECT

(D) The distance between C and D is three-quarters the distance between A and B (\$1.5 billion).
False, distance btw C and D is 1

4. The Keynesian multiplier says that an increase in investment (I↑) or government spending (G↑) can lead to an even higher increase in total output (Y↑). Explain how with intuition how it works, and how does it relate to the MPC. Y = C + I + G, so if either G or I increase, Y (output) will be increased. According to $C = C_0 + MPC(Y_d)$, Y increase itself, C will increase.

5. The fiscal (government spendign) multiplier tends to be high (ตกต่ำ) during a recession, but they tend to be low (perhaps even lower than one) during an expansion (ขยายตัว). How could we explain this phenomenon?

(i) if MPC is high, the multiplier will be high.
if MPC is low, the multiplier will be low.
(ii) In terms of rich, the richer, the less MPC.
(iii) If economic is good, there will have more rich people and MPC will be lower which means that the multiplier tends to be a recession.

(ii) คนรวย : ยิ่งรวย MPC ยิ่งน้อย
ex. มีเงิน 100 บาท กิน 80 : MPC = 80%.
มีเงิน 100 ล้าน กิน 80 : MPC < 80%.

✲ To find equilibrium, let Y = AE

AE = C+I+G

= 1240 + 100 + 200 = 1,540

S = Y-T-C (private saving)

S_G = T-G (government saving)

Y = C+I+G

public saving (government spending)

$S_{Gov} = T - G - T_R$

Problem II: The Keynesian Cross in a small closed and open economy (10 points)

Assume that, in a closed economy:

AE = 500 + 0.5Y − 0.5(80) + 100 + 200

Y = 500 + 0.5Y − 40 + 100 + 200

Y = 760/0.5 = 1520

AE = 0.5Y + 760

= 760

C_0 = 500

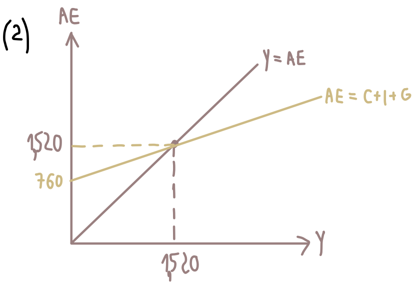
MPC = 0.5

$$
\begin{aligned}
C &= 500 + 0.5 Y_D \\
I &= 100 \\
T &= 80 \\
G &= 200
\end{aligned}
$$

Y_D = Y-T

= 500 + 0.5Y − 0.5T = 1220

(2)



1. (0.5 point) Solve for (i) equilibrium consumption; (ii) "planned" aggregate expenditure (aggregate demand); (iii) disposible income. Characterise the equilibrium.

   1220

   AE = C+I+G = 1220+100+200 = 1520

   Y-T = 1520-80 = 1440

2. (0.5 point) Graph – with proper labels – the equilibrium output and expenditure

3. (1 point) Solve for the equilibrium private savings and public savings.

   S = Y-T-C = 1520-80-1220 = 220   S = T-G = 80-200 = -120

   household   government spending

4. (1 point) Calculate the Keynesian multiplier, as well as the autonomous spending. What do they mean?

   Y = $C_0 + C_1(Y_d) + G_0 + I_0$ = 2   760

   $Y = C_0 + C_1(Y_d) + G_0 + I_0$

   $Y = C_0 + C_1(Y-T) + G_0 + I_0$

   $Y = C_0 + C_1Y - C_1T + G_0 + I_0$; $Y - C_1Y = C_0 - C_1T + G_0 + I_0$

   $Y(1-C_1) = C_0 - C_1T + G_0 + I_0$

   ; $Y = \underbrace{\frac{1}{1-C_1}}_{\text{multiplier}} \underbrace{C_0 - C_1T + G_0 + I_0}_{\text{autonomous spending}}$

   Multiplier $\frac{1}{1-C_1} = \frac{1}{1-0.5} = 2$

   Autonomous spending $C_0 - C_1T + G_0 + I_0$

   = 500 − (0.5)(80) + 200 + 100

   = 500 − 40 + 300 = 760

   No matter there is change in income or not we still need to spend 760 but change will depend on multiplier instead.

5. (1 point) It is election year, and the incumbent government increases their government spending from 200 to 300. Find the new equilibrium demand, output, consumption, and disposable income. How much does each increase? Graph these changes. Why would the government want to do this?

   G=300   1320   1640

   AE = 500 + 0.5Y − 0.5(80) + 100 + 300

   Y = 500 + 0.5Y − 40 + 400

   Y = 1,720

   C = 500 + 0.5(1720 − 80)

   = 1320

   Spending more for boosting economic.

   Now let's consider a small open economy where the exchange rate and interest rate are pegged on the US.

$$
\begin{aligned}
C &= c_0 + c_1(Y - T) \\
I &= d_0 + d_1 Y - d_2 r \\
M &= m_1 Y \\
X &= x_1 Y^W
\end{aligned}
$$

d_1 = MPI (marginal propensity to invest)   income ↑ → invest ↑?

d_2 = the size that I will change when r increases by 1 unit.

m_1 : marginal propensity to import

endogenous = ตัวแปรที่depends on other factors (can be fluctuation)

$G = G_0$

Let r be the exogenous interest rate, and Y^W the level of foreign outputs. G is exogenous.

6. (1 point) All coefficients (e.g. c_1, d_1, d_2) are positive. According to your understanding, what is d_1 and d_2? What are the reasons for the signs before them (plus or minus)?

   d_1 is the marginal propensity to invest

   d_2 is the size that I will change when r increases by 1 unit.

   plus that in front of d_1Y shows the relationship that income increase, investment will increase. Minus shows the relationship that interest rate increase, investment will decrease.

7. (3 points) What is the effect of lower government spending ($G \downarrow$) on the budget balance, $G - T = G - tY$? Assuming that $(1 - c_1(1-t) - d_1 + m_1) < 1$, and the linear tax rate t is constant.

8. (2 points) Suppose that the government is budget balanced – given by $G = T = tY$. Find the equilibrium output in this economy. How does the equilibrium output change when foreign output increases? *Tip: replace G and T by tY.*

   T = G   Y = AE

   Y = C+I+G+X−M

   $Y = C_0 + C_1(Y - tY) + d_0 + d_1Y - d_2r + tY + x_1Y^W - m_1Y$

   $Y - C_1Y - C_1tY - d_1Y - tY + m_1Y = C_0 + d_0 - d_2r + x_1Y^W$

   $Y(1 - C_1 - C_1t - d_1 - t + m_1) = C_0 + d_0 - d_2r + x_1Y^W$

   $Y = \frac{1}{1 - C_1 - C_1t - d_1 - t + m_1} C_0 + d_0 - d_2r + x_1Y^W$

   $\frac{dy}{dy^W} = \frac{x_1}{1 - C_1 - C_1t - d_1 - t + m_1}$

   ∴ Y^W increase by 1 unit, equilibrium output will change by $\frac{x_1}{1 - C_1 - C_1t - d_1 - t + m_1}$

QUESTION 7 ◡̈

$Y = [C_0 + C_1(Y) - C_1(tY) + d_0 + d_1Y - d_2r + G + X_1Y^W - M_1Y]$

$Y = \underbrace{\frac{1}{(1 - C_1(1-t) - d_1 + M_1)}}_{[\text{MULT}]} [C_0 + d_0 - d_2r + G + X_1Y^W] = \text{mult}[C_0 + d_0 + d_2r + G + X_1Y^W]$

BB = G − tY   BB = G − tY

BB = G − t   BB = G − t(mult)$(C_0 + d_0 - d_2r + G + X_1Y^W)$

BB = $G - tMC_0 - tMd_0 + tMd_2r + tMG - tMX_1Y^W$

BB = $(1 - tM)G - tMC_0 - tMd_0 + tMd_2r + tMX_1Y^W$

$\frac{dBB}{dG} = 1 - \frac{1}{(1 - C_1(1-t) - d_1 + M_1)}$

since $0 < t < 1$

$1 - C_1(1-t) - d_1 + M_1 < 1$

if $t > 1 - C_1(1-t) - d_1 + M_1$ ∴ G↑ ⇒ BB↓   G↓ ⇒ BB↑

if $t < 1 - C_1(1-t) - d_1 + M_1$ ∴ G↑ ⇒ BB↑   G↓ ⇒ BB↓

maximum capacity and output

long-run

Problem IV: *"you shall earn your bread in sweat"* (5 points)

มุมมอง

Based on your mandatory reading written by Michal Kalecki in 1943, titled *Political Aspects of Full Employment*, consider the text below.

ก.จ้างงานที่เต็มที่แล้ว

ช่วงตกต่ำของเศรษฐกิจ ปรารถนา ค.เจริญรุ่งเรือง

The referenced work asked a perplexing question. *"The entrepreneurs in the slump are longing for a boom; why do they not gladly accept the synthetic boom which the government is able to offer them?"* Summarise the main reasons given.

what phenomenon?

My question is this. Does the same phenomenon (existence of political obstacles from capitalists against full-employment economic policy) happens in Thailand? If not, explain; and if so, do the same reasons apply? Are there any other reasons you think are more accurate?

word count: 600 words (±20 words are allowed)

Begining with the defination of "Full Employment", it is a target to give work for everyone who needs job and is in labour force. So, there is no unemployment without willingness in economic system. According to this target, the economic system will have fully production capacity and reach profit maximization of resource uring. In short, full employment does not stand for zero employment. In practice, the concept of full employment generally refers to full employment of labour force of a country. When an increase in aggregate demand does not result in an increase in level of output and employment, it shows state of full employment.

There are several reasons that the entrepreneurs regret the government's offer. First, they do not like the way that the government interfere the problem of employment. This gives the capitalists a powerful indirect control over government policy. Everything that may affect the confidence must be carefully avoided because it would cause an economic crisis. But if the government learns how to rise employment by its own purchases, this powerful controlling devices loses its effectiveness. Therefore, the budget deficits necessary to carry out government intervention must be regarded as perilous. Otherwise, the private investment might be impaired their profit and the boon of public investment upon employment offset by the bane of the decline in private investment.

The dislike of the direction of government spending: public investment and subsidizing consumption is the second reason. The creation of employment by government spending has a special aspect which makes the opposition particularly intense. The government spending policy grows more acute when it is considered to spend money on the objects. Also, when the government has increased wage, most of the firms will not happy to pay more in order to hire employers because of higher wage, higher expense. In terms of taxation, rich people have paid income tax which higher amount money than poorer but the government spent those money for helping those poor and the wealthy people gain less benefit from taxation. Lastly, the dislike of the social and the political changes resulting from the maintenance of full employment. The maintenance of full employment would cause social and political change which would give the new impetus to the opposition of the business leaders.

According to the phenomenon, I think full employment is hard to happen in Thai economic because there are many reasons to support this statement. The first common factor is "frictional unemployment". These type of unemployment is short-term unemployment because they will have short time to have no job. Secondly, the seasonal unemployment is also affected to the full employment because there will be some seasons that these kind of worker does not have job. As a result of full employment, most of the capitalists are not satified to have a period of full employment now that full employment will cause them to hire a huge number of employers and have more expense on wage. In terms of structural unemployment, the capitalists are willing to pay more in order to hire the qualified workers; on the other hand, if they were in the period of full employment, they would hire either regular workers or qualified employers. There is one good example that why the entrepreneurs do not want full employment: Monopoly. Monopoly firm tend to produce as less as possible but push price as much as possible, which means that monopoly firm does not want to employ a lot of employer (less labour demand). Fortunately, there is one situation that have the highest chance to be full employment which is that during the period of war because the government will need a huge number of labour capacity in order to produce weapons and etc.

From my point of view, full employment never exists because it is always possible to find some people unwilling to do any productive work though they may be fit physically and mentally.